

Teacher: Julia Stuart Date(s) taught 2<sup>nd</sup> December 2014

 Grade: 8 Course: Science Class Period: C

 Topic: Lesson title: Newton's Laws Presentations

Objectives (skill, knowledge, attitudes and standards)		
To develop an understanding of Newton's Laws of motion To enable students to have an active role in the class teaching. <b>NSES Standards</b> B.2.1 The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph. B.2.2 An object that is not being subjected to a force will continue to move at a constant speed and in a straight line. B.2.3 If more than one force acts on an object along a straight line, then the forces will reinforce or cancel one another, depending on their direction and magnitude. Unbalanced forces will cause changes in the speed or direction of an object's motion. <b>NGSS Standards</b> Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. MS-PS2-1 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. MS-PS2-2 Note: this lesson is being taught so students will be able to demonstrate the performance expectations above in a future lesson. Parts of the science and engineering practices are also addressed. <b>Constructing Explanations and Designing Solutions</b> Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. Apply scientific ideas or principles to design an object, tool, process or system. <b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in 6–8 builds from K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world. Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.		
Activities/Methods	Resource Materials	Differentiation, Modifications or Accommodations
1. Discuss the Newton's laws rubric. 2. Students give presentations on Newton's laws and ask each other questions. (Elaboration and clarification) 3. Students complete the Newton's laws worksheet in mixed groups so have an expert from each team.	<b>Students have made foldables already and have the forces worksheet with the statements on. They will be given the Newton's laws worksheet in the lesson.</b>	Students are in mixed ability groups chosen by me. Ben Thomas (most able student in the group) has been made the leader of the group with the biggest task. For students that are absent there is a parallel individual rubric.
Assessment:	Risk Assessment:	
Newton's laws presentation is assessed.	CLEAPSS cards attached?	Yes/ <b>no</b>
	Special instructions for specific classes?	Yes/ <b>no</b>
	Special instructions for specific students?	Yes/ <b>no</b>
	Safety notes on w/s in text?	Yes/ <b>no</b>
		Reflection:

	Safety Notes:		
Homework:			
Finish Newton's Laws worksheet			